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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Eduard Michel

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04/15/2008

CLARIANT CORPORATION
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EXAMINER

BURNEY, RACHEL L

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

04/15/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/523,536	Applicant(s) MICHEL ET AL.	
	Examiner Rachel L. Burney	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5,6 and 8-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-6, and 8-24 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 5 is objected to because of the following informalities: claim 5 is dependent on cancelled claim 4. The examiner has interpreted claim 5 as dependent on claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 103

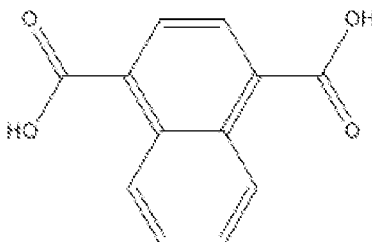
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 2, 5-6, 8, 10-11, 15-17, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5502118, Macholdt et al. in view of US Patent 5360859, Ogawa et al.

With respect to claims 1, 5, 6, and 22, Macholdt discloses a process for controlling the charge of an electrophotographic toner (column 1, lines 5-7) wherein the charge control agent is a polymer salt comprising a cationic and an anionic portion. The cationic portion is metal cations and the anionic portion is a dicarboxylic acid (column 5, lines 19-42). The metal cations are divalent and trivalent metal cations (column 10, lines 28-30). The anionic dicarboxylic acid is

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1,4-naphthalenedicarboxylic acid (column 6, lines 14-20) which is an organic anion having the structure:

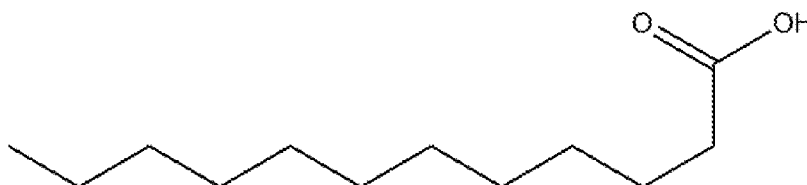


While Macholdt doesn't specify the structure is a double hydroxide salt, the formula for the salts of Macholdt are substantially similar to those of the instant application, and therefore the compositions would have substantially similar characteristics, such as being a double hydroxide salt having about 1.8 to about 2.2 times as many hydroxyl groups as metal cations. Macholdt further discloses that the salt may contain Mg^{2+} and Al^{3+} (column 8, lines 42-43), but does not give a specific example of a hydroxide salt with both cations. Ogawa teaches complex hydroxide salts for stabilizing resins (column 1, lines 60-63) wherein a hydrotalcite having Mg:Al in a ratio from 2-2.5 has the best heat stabilizing action (column 2, lines 15-16). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a hydrotalcite having Mg:Al in a ratio from 2-2.5, as taught by Ogawa, in the process of Michel to optimize the heat stability of the polymer.

With respect to claim 3, Macholdt and Ogawa disclose the process of claim 1 as discussed above wherein the metal cations are selected from Na^{+} and K^{+} (column 10, lines 28-29).

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With respect to claims 8, Macholdt and Ogawa disclose the process of claim 1 as discussed above wherein a suitable monofunctional carboxylic acid includes lauric acid (column 7, lines 26-29), which is a C₁₂ fatty acid having the structure:



With respect to claim 10, Macholdt and Ogawa disclose the process of claim 1 as discussed above wherein the charge control agent is a compound of a fluorinated phosphonium ion (column 9, lines 39-40).

With respect to claim 11, Macholdt and Ogawa disclose the process of claim 1 as discussed above wherein the charge control agent is present in an amount from 0.01%-50% by weight of the toner (column 12, lines 45-50).

With respect to claim 15, Macholdt and Ogawa disclose the process of claim 1 as discussed above wherein the metal cations are selected from Mg²⁺, Ca²⁺, Zn²⁺ and Fe²⁺ (column 10, lines 28-30).

With respect to claim 16, Macholdt and Ogawa disclose the process of claim 1 as discussed above wherein the metal cations are selected from Al³⁺, Fe³⁺ and Cr³⁺ (column 10, lines 28-30).

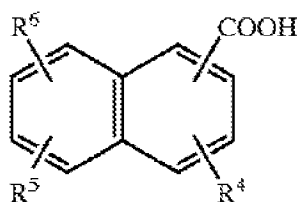
With respect to claim 17, Macholdt and Ogawa disclose the process of claim 8 as discussed above wherein the carboxylic acid is a stearic acid (column 7, lines 26-28).

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With respect to claim 23, Macholdt and Ogawa disclose the process of claim 1 as discussed above wherein the electrophotographic toner comprises a binder and a charge control agent is incorporated into the binder (column 12, lines 45-50).

With respect to claim 24, Macholdt and Ogawa disclose the process of claim 1 as discussed above wherein the charge control agent is present in an aqueous solution (column 11, lines 27-30).

4. Claims 9, 12, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6207335, Michel et al. in view of Japanese patent 2003-162145, Saiki et al. US PGPub 2003/0215731, Saiki et al. is used as an English translation of the Japanese patent. Michel discloses an electrophotographic toner comprising 0.01 to 50% by weight of a binder (column 15, lines 12-15), 0.01-50% by weight of the charge control agent, hydroxide salt as shown in claim 1, (column 14, lines 35-40), and 1-10% by weight of a colorant (column 15, lines 22-24) wherein the charge control agent is a hydroxide salt comprising: a divalent and trivalent metal cation (column 7, lines 37-38) and an organic anion having the formula:



wherein R⁴, R⁵, and R⁶ are hydrogen or a C₆-C₁₀-aryl group, where 1 to 3 of the aryl groups is substituted with a carboxyl or hydroxyl group (column 4, line 47 – column 6, line 4). Michel fails to teach the use of a hydrotalcite. Saiki teaches that commonly

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used charge control agents include hydrotalcite compounds (PP 0434). It would have been obvious to one of ordinary skill in the art at the time of the invention to use any commonly used charge control agents in the process of Michel, including hydrotalcite compounds, as taught by Saiki.

5. Claims 13, 14, 19, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5728366, Martin et al.

With respect to claims 13 and 19, Martin discloses a magnesium-aluminum hydrotalcite (column 4, lines 66-67) wherein a carbonate is used to make the hydrotalcite (column 4, lines 43-45). The hydrotalcite has a Mg:Al ratio from about 2:1 to about 3:1 (column 4, line 66 – column 5, line 1). The hydrotalcite is made up from the formula $A_{1-x}B_x(OH)_2C_z \cdot mH_2O$ where A represents a divalent metal cation, B represents a trivalent metal cation, C represents a polyvalent anion, x is 0.09-0.67, $z=x/n$, where n is the charge of the anion and m is 0.5-2 (column 3, line 64 – column 4, line 5). A can be Mg^{2+} , B can be Al^{3+} (column 4, lines 8-10) and C can be an alkyl group with 1-30 carbons, wherein any or all of the carbons can be substituted with sebacates and succinates, which can also be substituted with sulfo and halogens, such as fluorine, (column 6, line 57 – column 7, line 18). The C group is present in an amount of x/n wherein x is the amount of B and n is the charge on the anion. While Martin does not give a desired range for C, it is reasonable to conclude that C would be present in less than 50% by weight of the total weight of the hydrotalcite. Martin does not give a ratio

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of the sulfosuccinic acid in the total weight of the hydrotalcite, however since the composition of Martin is the same of that as the instant application and the ranges of the instant application are extremely broad (2%-83% and .5%-70%), it would be reasonable to conclude that the inclusion of sulfosuccinic acid in the composition of Martin would fall within the ranges given by the instant application.

With respect to claims 14 and 20, Martin discloses the composition of claim 13 as discussed above, wherein the hydrotalcite is identified by the formula $A_6B_2(OH)_{16}C_z \cdot 4H_2O$, wherein A can be Mg^{2+} and B can be Al^{3+} (column 4, lines 7-10) and C is the same as the Z group of the instant application, as discussed above.

With respect to claim 21, Martin discloses the composition of claim 14 as discussed above, wherein x is between 0.9 and 0.67. It would have been obvious to one of ordinary skill in the art at the time of the invention to use any number between 0.9 and 0.67. Using 0.33 for x and multiplying the entire formula by 6, the formula becomes $A_4B_2(OH)_{12}C_z \cdot nH_2O$, using the same substitutions as discussed above, the formula $Mg_4Al_2(OH)_{12}(CO_3)_bZ_a \cdot nH_2O$ can easily be derived.

Response to Arguments

Claim Objections

6. In view of the amendments to the claims filed 01/10/2008, the objections to the claims have been withdrawn.

Claim Rejections - 35 USC § 112

7. In view of the amendments to the claims filed 01/10/2008, the rejection to the claims under 35 USC § 112 has been withdrawn.

Claim Rejections - 35 USC § 102/103

8. Applicant's arguments, see page 10, filed 01/10/2008, with respect to the rejection(s) of claim(s) 1-3, 6-8, 10, 11, 15-17, and 22-24 under US Patent 5502118, Macholdt et al. have been fully considered and are persuasive in view of the amendments to the claims. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Macholdt and Ogawa as discussed above.

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9. Applicant's arguments, see page 10, filed 01/10/2008, with respect to the rejection(s) of claim(s) 12 and 18 under US Patent 6207335, Michel et al. have been fully considered and are persuasive in view of the amendments to the claims.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Michel in view of Saiki as discussed above.

10. Applicant's arguments see page 11, filed 01/10/2008, with respect to the rejection(s) of claim(s) 4 and 5 under US Patent 5360859, Ogawa et al. have been fully considered but they are not persuasive. In response to applicant's argument that Ogawa is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Ogawa discloses a similar chemical which is used to control electrical properties. Ogawa is only relied on for a ratio of Mg^{2+} and Al^{3+} , which may already be present in Michel.

11. Applicant's arguments see pages 12 and 13, filed 01/10/2008, with respect to the rejection(s) of claim(s) 13, 14, 19, 20, and 21 under filed US Patent 5728366, Martin et al. have been fully considered but they are not persuasive. Applicant argues that Martin does not disclose applicant's claimed range for combination of the hydrotalcite with C

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and that the range of 1-45% by weight of a combination of sebacic acid and C12-C44 fatty acid gives unexpected results over the use of sebacic acid alone. Applicant refers to example 14, on the table on page 26. The examiner respectfully disagrees. Martin discloses that the hydrotalcite is made up from the formula $A_{1-x}B_x(OH)_2C_z$ where A represents a divalent metal cation, B represents a trivalent metal cation, and C represents an alkyl group with 1-30 carbons, wherein any or all of the carbons can be substituted with sebacates and succinates, x is 0.09-0.67 and $z=x/n$, as discussed above. Assuming one were to select Mg^{2+} for A, Al^{3+} for B, C having two carbons, one substituted with sebacate and one with succinate, and x as 0.9, the sebacate/succinate mixture would be present in an amount of 24%, which falls within the applicant's range. With respect to the examples, example 14 appears to be the only example having sebacic acid and stearic acid, which are present in an amount of 26%. This example is not commensurate in scope with the broad ranges of the instant claims. Example 14 has 1.5 g of sebacic acid and 2 g of stearic acid, while all other examples have 1-1.5g of the anion, therefore the results of example 14 would only be comparable to other mixtures which also contain 3.5g of the anion. The examiner would also like to refer to example 10, which appears only to comprise sebacic acid, yet according to the table on page 26 exhibits a much lower negative charge than that of example 14. This shows that the Mg/Al ratio is also important in determining the negative charge, not solely the anion alone.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rachel L. Burney whose telephone number is (571)272-9802. The examiner can normally be reached on Mon-Thurs: 7:30-6:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RLB

**/Mark F. Huff/
Supervisory Patent Examiner, Art Unit 1795**